

SEQUENCE LISTING

<110> Takeuchi, Masakazu
Sato, Keiko
Sakamoto, Yoshimasa
Tawarada, Maki
Ohtsuka, Toshihisa

<120> MAMMALIAN PRICKLE GENE

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Val His Gln Tyr Tyr Ser Cys Leu Pro Glu Glu Lys Val Pro Tyr Val
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Asn Ser Pro Gly Glu Lys Leu Arg Ile Lys Gln Leu Leu His Gln Leu
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Pro Pro His Asp Asn Glu Val Arg Tyr Cys Asn Ser Leu Asp Glu Glu
85 90 95
Glu Lys Arg Glu Leu Lys Leu Phe Ser Asn Gln Arg Lys Arg Glu Asn
100 105 110
Leu Gly Arg Gly Asn Val Arg Pro Phe Pro Val Thr Met Thr Gly Ala
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Ile Cys Glu Gln Cys Gly Gly Gln Ile Lys Gly Gly Asp Ile Ala Val
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Phe Ala Ser Arg Ala Gly His Gly Ile Cys Trp His Pro Pro Cys Phe
145 150 155 160
Ile Cys Thr Val Cys Asn Glu Leu Leu Val Asp Leu Ile Tyr Phe Tyr
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Gln Asp Gly Lys Ile Tyr Cys Gly Arg His His Ala Glu Cys Leu Lys
180 185 190
Pro Arg Cys Ala Ala Cys Asp Glu Ile Ile Phe Ala Asp Glu Cys Thr
195 200 205
Glu Ala Glu Gly Arg His Trp His Met Arg His Phe Cys Cys Phe Glu
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Cys Glu Thr Val Leu Gly Gly Gln Arg Tyr Ile Met Lys Glu Gly Arg

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690	695	700													
Ala	Ser	Glu	Arg	Glu	Val	Ile	Ala	Arg	Leu	Lys	Asp	Arg	Pro	Pro	Leu

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Glu Ser Met Gly Gln Gly Ser Arg Arg Asp Leu Tyr Ser Gln Cys Pro			
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Arg Thr Val Ser Asp Leu Ala Leu Gln Asn Ala Phe Gly Glu Arg Trp			
755	760	765	
Gly Pro Tyr Phe Thr Glu Tyr Asp Trp Cys Ser Thr Cys Ser Ser Ser			
770	775	780	
Ser Glu Ser Asp Asn Glu Gly Tyr Phe Leu Gly Glu Pro Ile Pro Gln			
785	790	795	800
Pro Ala Arg Leu Arg Tyr Val Thr Ser Asp Glu Leu Leu His Lys Tyr			
805	810	815	
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 actgaccaga tcaagactcg gtggcggctt cttctaaagc ttgcggctc atcctctagg 360
 aggaagatct gcctgcactg caagtgtccc caggaggagc ac atg gtg aca gtg 414
 Met Val Thr Val
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atg ccg ctg gag atg gag aag acc att agc aag ctc atg ttt gac ttc 462
 Met Pro Leu Glu Met Glu Lys Thr Ile Ser Lys Leu Met Phe Asp Phe
 5 10 15 20

cag agg aat tca acc tca gat gac gac tcg ggc tgt gct ttg gaa gaa 510
 Gln Arg Asn Ser Thr Ser Asp Asp Asp Ser Gly Cys Ala Leu Glu Glu
 25 30 35

tat gcc tgg gtc ccc ccg ggg ctg aag cct gag cag gtg cac cag tat 558
 Tyr Ala Trp Val Pro Pro Gly Leu Lys Pro Glu Gln Val His Gln Tyr
 40 45 50

tat agc tgc ctc cca gaa gag aaa gtt ccc tat gtc aac agc cct gga 606
 Tyr Ser Cys Leu Pro Glu Glu Lys Val Pro Tyr Val Asn Ser Pro Gly
 55 60 65

gag aaa ttg cga atc aag cag cta ctg cac cag ctg cca ccc cac gac 654
 Glu Lys Leu Arg Ile Lys Gln Leu Leu His Gln Leu Pro Pro His Asp
 70 75 80

aat gag gtt cgg tat tgc aac tcc ctg gac gag gag aag cgg gag 702

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Leu	Lys	Leu	Phe	Ser	Asn	Gln	Arg	Lys	Arg	Glu	Asn	Leu	Gly	Arg	Gly	
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aat	gtc	agg	ccc	tcc	ccc	gtc	acc	atg	aca	ggg	gct	att	tgc	gaa	cag	798
Asn	Val	Arg	Pro	Phe	Pro	Val	Thr	Met	Thr	Gly	Ala	Ile	Cys	Glu	Gln	
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tgt	gga	ggt	cag	att	aag	ggc	ggc	gac	atc	gct	gtg	ttt	gca	tca	cgt	846
Cys	Gly	Gly	Gln	Ile	Lys	Gly	Gly	Asp	Ile	Ala	Val	Phe	Ala	Ser	Arg	
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gct	ggc	cat	ggc	atc	tgc	tgg	cat	cca	cca	tgc	ttt	ata	tgc	aca	gtc	894
Ala	Gly	His	Gly	Ile	Cys	Trp	His	Pro	Pro	Cys	Phe	Ile	Cys	Thr	Val	
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tgc	aat	gag	ctt	ctg	gtt	gac	ctg	atc	tac	ttt	tac	caa	gat	ggg	aag	942
Cys	Asn	Glu	Leu	Leu	Val	Asp	Leu	Ile	Tyr	Phe	Tyr	Gln	Asp	Gly	Lys	
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atc	tac	tgt	ggc	agg	cac	cat	gct	gag	tgc	ctg	aag	ccg	cgc	tgt	gca	990
Ile	Tyr	Cys	Gly	Arg	His	His	Ala	Glu	Cys	Leu	Lys	Pro	Arg	Cys	Ala	
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gcc	tgt	gat	gag	atc	atc	ttt	gca	gat	gag	tgc	aca	gag	gct	gaa	gga	1038
Ala	Cys	Asp	Glu	Ile	Ile	Phe	Ala	Asp	Glu	Cys	Thr	Glu	Ala	Glu	Gly	
						200			205				210			
cga	cat	tgg	cac	atg	aga	cac	tcc	tgc	tgc	ttc	gag	tgt	gag	acg	gtg	1086
Arg	His	Trp	His	Met	Arg	His	Phe	Cys	Cys	Phe	Glu	Cys	Glu	Thr	Val	
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ctg	ggg	ggc	cag	cgc	tac	atc	atg	aag	gag	gga	aga	ccc	tac	tgc	tgt	1134
Leu	Gly	Gly	Gln	Arg	Tyr	Ile	Met	Lys	Glu	Gly	Arg	Pro	Tyr	Cys	Cys	
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cac	tgc	ttt	gag	tcc	ctg	tat	gca	gaa	tat	tgt	gac	acc	tgt	gcc	caa	1182
His	Cys	Phe	Glu	Ser	Leu	Tyr	Ala	Glu	Tyr	Cys	Asp	Thr	Cys	Ala	Gln	
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cat	ata	gga	att	gac	caa	ggt	caa	atg	acc	tat	gac	ggc	caa	cac	tgg	1230
His	Ile	Gly	Ile	Asp	Gln	Gly	Gln	Met	Thr	Tyr	Asp	Gly	Gln	His	Trp	
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cat	gct	acg	gag	aac	tgt	tcc	tgc	tgt	gct	cat	tgt	aag	aag	tct	ctc	1278
His	Ala	Thr	Glu	Asn	Cys	Phe	Cys	Cys	Ala	His	Cys	Lys	Lys	Ser	Leu	
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ctg	ggg	cg	cca	tcc	ctc	ccg	aag	caa	ggc	cag	ata	tcc	tgc	tca	cg	1326
Leu	Gly	Arg	Pro	Phe	Leu	Pro	Lys	Gln	Gly	Gln	Ile	Phe	Cys	Ser	Arg	
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Ala	Cys	Ser	Ala	Gly	Glu	Asp	Pro	Asn	Gly	Ser	Asp	Ser	Ser	Asp	Ser	
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gcc	tcc	cag	aat	gcc	aga	gcc	aag	gag	tct	cgc	cgc	agt	gcc	aaa	att	1422
Ala	Phe	Gln	Asn	Ala	Arg	Ala	Lys	Glu	Ser	Arg	Arg	Ser	Ala	Lys	Ile	

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cag ctg cag gtg agt tct aac cgg ctc tca gct gat gtg gac ccc ctg Gln Leu Gln Val Ser Ser Asn Arg Leu Ser Ala Asp Val Asp Pro Leu 360	365	370		1518
tca gtg cag atg gat ctc ctc agc ctg tcc agc cag acg ccc agc ctc Ser Val Gln Met Asp Leu Leu Ser Leu Ser Ser Gln Thr Pro Ser Leu 375	380	385		1566
aac cgg gac ccc att tgg agg agc cgg gat gag ccc ttc cat tac ggg Asn Arg Asp Pro Ile Trp Arg Ser Arg Asp Glu Pro Phe His Tyr Gly 390	395	400		1614
aac aag atg gag cag aac caa tcc cag agt cct ttg cag ctc ctc agc Asn Lys Met Glu Gln Asn Gln Ser Gln Ser Pro Leu Gln Leu Leu Ser 405	410	415	420	1662
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aca gag gac atg aca ccc aca gaa cag act cct cgt ggc tct atg gaa Thr Glu Asp Met Thr Pro Thr Glu Gln Thr Pro Arg Gly Ser Met Glu 535	540		545	2046
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acg gag tat gat tgg tgc tcc acc tgc tcc tcc tct tca gag tcc gac Thr Glu Tyr Asp Trp Cys Ser Thr Cys Ser Ser Ser Glu Ser Asp 775 780 785	2766
aat gag ggc tac ttc cta gga gaa ccc atc ccc cag cca gcc cgc cta Asn Glu Gly Tyr Phe Leu Gly Glu Pro Ile Pro Gln Pro Ala Arg Leu 790 795 800	2814
cga tat gtc aca agt gat gag ctc ctg cac aag tac agc tct tac ggt Arg Tyr Val Thr Ser Asp Glu Leu Leu His Lys Tyr Ser Ser Tyr Gly 805 810 815 820	2862

gtc ccc aaa tcc tcc acc tta ggt ggc aga gga cag ttg cac agc agg 2910
Val Pro Lys Ser Ser Thr Leu Gly Gly Arg Gly Gln Leu His Ser Arg
825 830 835

aaa aga cag aag agc aaa aac tgt atc att tcg taatgtgatg gtgggtgggg 2963
Lys Arg Gln Lys Ser Lys Asn Cys Ile Ile Ser
840 845

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Pro	Gly	Ala	Gly	Met	Gly	Pro	Gly	Pro	Gly	Ser	Gly	Ala	Ala	Ala	Gly	
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Tyr	Ser	Asn	Ala	Gln	Leu	Pro	Pro	Pro	His	His	His	Gln	Leu			
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Ser	Pro	Ala	Leu	Ser	Thr	Pro	Ser	Pro	Pro	Ser	Leu	Leu	His	His	Pro	
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Ala	Gly	Gly	Thr	Ser	Ser	Ala	Ser	Ala	His	Ala	Pro	Phe	Leu	Gly	Gly	
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Pro	His	Met	Asp	Met	Gln	Arg	Gln	Ser	His	Ser	Asp	Asp	Asp	Ser	Gly	
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Cys	Ala	Leu	Glu	Glu	Tyr	Thr	Trp	Val	Pro	Pro	Gly	Leu	Arg	Pro	Asp	
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Gln	Val	Arg	Leu	Tyr	Phe	Ser	Gln	Ile	Pro	Asp	Asp	Lys	Val	Pro	Tyr	
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Val	Asn	Ser	Pro	Gly	Glu	Gln	Tyr	Arg	Val	Arg	Gln	Leu	Leu	His	Gln	
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Leu	Pro	Pro	His	Asp	Asn	Glu	Val	Arg	Tyr	Cys	His	Ser	Leu	Thr	Asp	
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Glu	Glu	Arg	Lys	Glu	Leu	Arg	Leu	Phe	Ser	Thr	Gln	Arg	Lys	Arg	Asp	
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Ala	Leu	Gly	Arg	Gly	Asn	Val	Arg	Gln	Leu	Met	Ser	Ala	Arg	Pro	Cys	
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Thr Arg Leu Gly Pro Asn Ala Ser Trp His Pro Ala Cys Phe Ala Cys
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 Ser Val Cys Arg Glu Leu Leu Val Asp Leu Ile Tyr Phe His Arg Asp
 325 330 335
 Gly Arg Met Tyr Cys Gly Arg His His Ala Glu Thr Leu Lys Pro Arg
 340 345 350
 Cys Ser Ala Cys Asp Glu Ile Ile Leu Ala Asp Glu Cys Thr Glu Ala
 355 360 365
 Glu Gly Arg Ala Trp His Met Asn His Phe Gly Cys His Glu Cys Asp
 370 375 380
 Lys Gln Leu Gly Gly Gln Arg Tyr Ile Met Arg Glu Gly Lys Pro Tyr
 385 390 395 400
 Cys Leu His Cys Phe Asp Ala Met Phe Gly Glu Tyr Cys Asp Tyr Cys
 405 410 415
 Gly Glu Gly Ile Gly Val Asp Gln Gly Gln Met Ser His Asp Gly Gln
 420 425 430
 His Trp His Ala Thr Asp Glu Cys Phe Ser Cys Asn Thr Cys Arg Cys
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 Ser Leu Leu Gly Arg Ala Phe Leu Pro Arg Arg Gly Gly Ile Tyr Cys
 450 455 460
 Ser Ile Ala Cys Ser Lys Gly Glu Pro Pro Thr Pro Ser Asp Ser Ser
 465 470 475 480
 Gly Thr Gly Met Tyr Thr Thr Pro Thr Pro Pro Thr Gln Gly Val Arg
 485 490 495
 Pro His Pro Gln Ala Pro Leu Pro Ala Arg Ile Pro Ser Ser His Ala
 500 505 510
 Ser Ser Ser Pro Pro Met Ser Pro Gln Gln Gln Gln His Gln Ala
 515 520 525
 Thr Phe Asn Gln Ala Met Tyr Gln Met Gln Ser Gln Gln Met Glu Ala
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 Ala Gly Gly Leu Val Asp Gln Ser Lys Ser Tyr Ala Ala Ser Asp Ser
 545 550 555 560
 Asp Ala Gly Val Val Lys Asp Leu Glu His Gly Gly His Met Gly Gly
 565 570 575
 Gly Asp Leu Thr Asp Phe Ser Gly Gly Arg Ala Ser Ser Thr Ser Gln
 580 585 590
 Asn Leu Ser Pro Leu Asn Ser Pro Gly Asp Phe Gln Pro His Phe Leu
 595 600 605
 Pro Lys Pro Met Glu Leu Gln Arg Asp Gly Val Tyr Asn Phe Asn Glu
 610 615 620
 Met Ser Ser Asn Leu Asp Ala Ala Trp Pro Ala Lys Pro Thr Asn Ser
 625 630 635 640
 Tyr His Leu Gln Arg Gln Leu Leu Glu Asn Pro His Thr Ala Ser Met
 645 650 655
 Pro Glu Leu Ala Gly Lys Leu Val Ala Pro Pro Ala His Met Gln His
 660 665 670
 Leu Ser Gln Leu His Ala Val Ser Ser His Gln Phe Gln Gln His Glu
 675 680 685
 Tyr Ala Asp Ile Val His Pro Pro Pro Pro Pro Gly Glu Ile Pro
 690 695 700
 Glu Leu Pro Thr Pro Asn Leu Ser Val Ala Ser Thr Ala Leu Pro Pro
 705 710 715 720
 Glu Leu Met Gly Ser Pro Thr His Ser Ala Gly Asp Arg Ser Leu Asn
 725 730 735
 Thr Pro Met Ser Thr Gln Ser Ala Ser His Ala Pro Pro His Pro Val
 740 745 750
 Ser Ile Leu Ser Gly Ala Ser Ser Ser Ser Pro Met Ser Gly Glu Pro
 755 760 765
 Ala Lys Lys Lys Gly Val Arg Phe Glu Gly Ile Pro Asp Thr Leu Pro
 770 775 780
 Arg Ser Arg Ser Tyr Ser Gly Asn Gly Ala Gly Thr Ser Ser Gly Gly

785	790	795	800
Glu	Arg	Glu	Arg
Glu	Arg	Asp	Arg
Asp	Arg	Asp	Lys
Lys	Glu	Gly	Gly
Gly	Gly	Gly	Arg
His	His	Ser	His
Gly	His	Ser	Ser
Arg	Arg	Arg	Arg
Arg	Arg	Arg	Lys
Arg	Arg	Ser	Ser
Ser	Ser	Ser	Ser
His	His	Arg	Ser
Gly	Ser	Gly	His
His	Arg	Ser	Arg
Ser	His	Thr	Thr
835	840	845	
Thr	Arg	Ala	Asp
Thr	Tyr	Ala	Pro
Ala	Gln	Pro	Leu
Gln		Ser	Ser
		Ser	Ser
Thr		Tyr	
850	855	860	
Gln	Gly	Pro	Pro
Pro	Ser	Val	Leu
865	870	875	880
Ala	Gln	Ala	Asn
Arg	Glu	Glu	Leu
Glu	Arg	Arg	Val
885	890	895	
Ser	Glu	Glu	Ser
Glu	Asp	Val	Cys
Ser	Val	Cys	Ser
900	905	910	
Ser	Glu	Asp	Tyr
Gly	Asp	Tyr	Met
915	920	925	
Met	Met	Met	Tyr
Gln	Leu	Pro	Gln
Arg	Arg	Asn	Arg
930	935	940	
Val	Val	Asp	Ala
Ser	Tyr	Ala	Leu
945	950	955	960
Arg	Lys	Lys	Asn
Lys	Pro	Ser	Cys
945	950	955	
Ile	Ile	Ser	